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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,014	09/30/2003	Randy J. Longsdorf	R11.12-0789	4855

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EXAMINER

KASENGE, CHARLES R

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/675,014

Applicant(s)

LONGSDORF ET AL.

Examiner

Charles R. Kasenge

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/27/05</u> . | 6) <input type="checkbox"/> Other: ____  |

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Kotoulas et al. U.S. Patent 6,493,689. Referring to claims 1 and 32, Kotoulas discloses an apparatus for use in an industrial process control or monitoring system (col. 5, lines 21-27), comprising: a process device for coupling to a process (col. 8, lines 57-62); a process coupling configured to couple the process device to a process (col. 9, lines 60-65); a vibration sensor configured to sense vibrations and provide a sensed vibration signal (col. 8, lines 63-65); and diagnostic circuitry located in the process device configured to receive the sensed vibration signal and responsively provide a diagnostic output related to a process disturbance or operation of a process component (col. 10, lines 24-34).

Referring to claims 2-5 and 33-35, Kotoulas discloses the apparatus of claim 1 wherein the process device includes a process variable sensor for sensing a process variable (col. 8, lines 63-67). Kotoulas discloses the apparatus of claim 1 wherein the process device includes a control element configured to control operation of the process (col. 8, lines 51-62). Kotoulas discloses the apparatus of claim 1 wherein the process device includes an input configured to receive a process signal (col. 8, lines 51-62). Kotoulas the apparatus of claim 1 wherein the process device includes output circuitry including communication circuitry configured to couple to a two-wire

process control loop (col. 20, lines 14-28).

Referring to claims 6-9 and 36-38, Kotoulas discloses the apparatus of claim 1 wherein the vibrations are carried through process components (col. 8, lines 51-62). Kotoulas discloses the apparatus of claim 1 wherein the vibration sensor comprises an accelerometer (col. 8, lines 64-67). Kotoulas discloses the apparatus of claim 1 wherein the vibration sensor is configured to sense vibrations along one axis (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the vibration sensor is configured to sense vibrations along more than one axis (col. 7, lines 30-48).

Referring to claims 10-15 and 39-42, Kotoulas discloses the apparatus of claim 1 wherein the output from the diagnostic circuitry is transmitted on a process control loop (col. 20, lines 14-28). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is related to failure of a process component (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is related to degradation in performance of a process component (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is related to an impending failure of a process component (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is based upon a comparison of sensed vibrations to a base line level (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 14 wherein the base line level is determined based upon history of the process (col. 9 and 10, lines 55-67 and 1-4).

Referring to claims 16-22 and 43-49, Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is based upon an accumulation of sensed vibrations (col. 9 and 10, lines 55-67 and 1-4). Kotoulas discloses the apparatus of claim 16 wherein the diagnostic output is based

upon a comparison of accumulated vibrations to a threshold (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is based upon trends in the sensed vibrations (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is used to adjust a control algorithm (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is used to compensate a process variable measurement (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is based upon a frequency spectrum of the sensed vibrations (col. 12, lines 6-9).

Referring to claims 23-26 and 50-53, Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is based upon rules (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic circuitry implements a neural network (col. 8, lines 51-62). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic circuitry implements fuzzy logic (col. 8, lines 51-62). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is based upon sensed spikes in the vibration signal (col. 15, lines 1-10). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is based upon a rolling average of the vibration signal (col. 10, lines 24-34).

Referring to claims 27-31 and 53-55, Kotoulas discloses the apparatus of claim 1 wherein the vibration sensor is selected from a group of vibration sensors including of capacitive, electrodynamic, piezoelectric and Micro-Electro-Mechanical Systems (MEMS) (col. 6, lines 64-67). Kotoulas discloses the apparatus of claim 1 wherein the diagnostic output is correlated with process operation (col. 10, lines 24-34). Kotoulas discloses the apparatus of claim 1 including a plurality of process devices configured to sense vibrations (col. 6 and 7, lines 64-67 and 1-8).

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Kotoulas discloses the apparatus of claim 1 wherein the process device is completely powered from a process control loop (col. 20, lines 14-28). Kotoulas discloses the apparatus of claim 1 wherein the process device is configured to couple to a process control loop selected from the group of process control loops consisting of two, three and four wire process control loops (col. 20, lines 14-28).

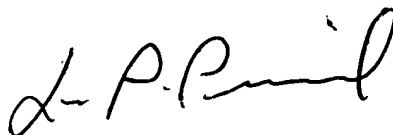
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles R. Kasenge whose telephone number is 571 272-3743. The examiner can normally be reached on Monday through Friday, 8:30 - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CK  
May 24, 2005



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